

32251

S/103/61/022/012/008/016
D201/D305

Accurate determination of ...

$N_2 \dots N_m$ equations, called the period equations. They make it possible to determine all unknown elements $t_{\beta j_\beta}$ and the period T of

self-oscillatory motion. The derived period equations determine the periodic motion only if the following conditions are satisfied:

a) The instants of switching $t_{\beta j_\beta}$ of all non-linear characteristics, as obtained from the period equations, satisfy the condition

$$t_{\beta 0} < t_{\beta 1} < \dots < t_{\beta N_\beta} = t_{\beta 0} + T \quad (7)$$

b) there are no other relay switchings except those at instants $t_{\beta j_\beta}$ and all switchings are so directed that when $t = t_{\beta j_{\beta-1}} + 0$, the image point $\sigma_\beta, f_\beta(\sigma_\beta)$ begins to move along a specified section and when $t = t_{\beta j_\beta} - 0$, it begins to move along the next section.

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From the Fourier series one can pass to the closed form of the elements of the column matrix which are roots of the characteristic polynomial $N(p)$. There are 6 Soviet-bloc references.

SUBMITTED: March 23, 1961

Card 5/5

^{E C.C.}
~~BEIXA, K.K.~~ GRISHIN, A.P., doktor tekhn. nauk, retsenzent; KUBITSKIY,
G.M., inzh., red.; BARANOVA, Z.S., red.izd-va; UVAROVA, A.F.,
tekhn. red.

[Nonlinear vibrations in systems for automatic regulation and
control] Nelineinye kolebania v sistemakh avtomaticheskogo re-
gulirovaniia i upravleniia. Moskva, Mashgiz, 1962. 262 p.
(MIRA 15:6)

(Automatic control) (Vibration)

16.8000 E C.C.

S/024/62/000/002/012/012
E140/E135

AUTHOR: Belya, ~~K.K.~~ (Moscow - Bucharest)

TITLE: A method of integrating certain equations of automatic control systems

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i avtomatika, no.2, 1962, 167-176

TEXT: The author studies the system of equations

$$\dot{X}(t) + \Lambda X(t) = 0 \quad (1.1)$$

where Λ is a square matrix of constants; $X(t)$ is the column of unknowns. A column $X(t, \tau)$ is introduced, coinciding with the required solution in the interval $+0 \leq t \leq \tau - 0$, and zero outside this interval over the entire t -axis. $X(t, \tau)$ will be considered as the value of the unsymmetrical, periodic column $X_\tau(t, \tau)$ with period τ within the interval

$$X_\tau(t, \tau) \equiv X(t, \tau) \equiv X(t) \quad \text{for } +0 \leq t \leq \tau - 0 \quad (1.2)$$

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The periodic vector $X_T(t, \tau)$ is uniquely defined by Eq.(1.1), the initial values X_0 and the period τ . The choice of this last is defined later in the article. The differential equation for X_T is first written, and its solution sought in the form of a Fourier series. The solution is:

$$X_T(t, \tau) = R(t, \tau)(X_0 - X_T) \quad (1.7)$$

where

$$R(t, \tau) = \frac{1}{\tau} \sum_{r=-\infty}^{\infty} (ir\omega E + \Lambda)^{-1} e^{ir\omega t} \quad (\omega = 2\pi/\tau) \quad (1.8)$$

The fundamental matrix R is periodic, with period τ , and is fully determined if its period is known. Its calculation is discussed further. The solution of Eq.(1.1) is then given by

$$X(t) = R(t, \tau)R^{-1}(+0, \tau)X_0 \quad \text{for } +0 \leq t \leq \tau - 0 \quad (1.11)$$

A power series is found for R which converges very rapidly. In an aside the author demonstrates the rate of convergence of the series by obtaining e to six places with six terms of the Card 2/4

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series

$$e = 1 + \frac{1}{1 - \frac{1}{2} + \frac{1}{12} - \frac{1}{720} + \frac{1}{30 \cdot 240} - \frac{1}{1 \cdot 209 \cdot 600} + \dots} \quad (1.24)$$

where the successive terms are given by the coefficients

$$c_2 = -\frac{1}{12}, \quad c_4 = \frac{1}{720}, \quad c_6 = -\frac{1}{30 \cdot 240}, \quad c_8 = \frac{1}{1 \cdot 209 \cdot 600}, \quad (1.17)$$

$$c_{10} = \frac{1}{47 \cdot 900 \cdot 160} \dots$$

defined by

$$c_q = \frac{1}{2^q} \left[\frac{1}{(q+1)!} - \frac{1}{q!} - \frac{2^2 c_2}{(q-1)!} - \frac{2^4 c_4}{(q-3)!} - \dots - \frac{2^{q-2} c_{q-2}}{3!} \right]$$

$$\text{for } q = 2, 4, 6, \dots \quad c_q = 0 \text{ for } q = 3, 5, 7, \dots \quad (1.16)$$

The solution of Eq.(1.1) is given by:
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$$X(t) = U(t) X_0 \quad (1.25)$$

where

$$U(t) = E - R^{-1}(t)$$

$$R(t) = \frac{1}{t} \wedge^{-1} + \frac{1}{2} E + \frac{1}{12} \wedge t - \frac{1}{720} (\wedge t)^3 + \frac{1}{30 \cdot 240} (\wedge t)^5 - \\ - \frac{1}{1 \cdot 209 \cdot 600} (\wedge t)^7 + \frac{1}{47 \cdot 900 \cdot 160} (\wedge t)^9 - \dots \quad (0 < t < t_c) \quad (1.26)$$

The interpretation of Eq.(1.11) as the solution of Eq.(1.1) is that in place of a fixed interval $+0 \leq t \leq \tau - 0$, the interval is made variable, $t = \tau - 0$. The concrete applications of the method permit constructing the transient processes in linear systems from the equations of motion, constructing the time characteristics from the transfer function, integrating inhomogeneous systems of linear differential equations with constant coefficients.

There are 3 tables.

SUBMITTED: May 25, 1961

Card 4/4

S/024/62/000/003/006/011
E140/E463

AUTHOR: ^{E C.C.}
Bel'ya, K.K. (Moscow - Bucharest)

TITLE: Determination of dynamic processes in piecewise-linear automatic control systems

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i avtomatika, no.3, 1962, 163-172

TEXT: The author applies the method proposed in his previous paper (AN SSSR. Izv. OTN. Energetika i avtomatika, no.2, 1962) to the problem of piecewise-linear systems. The solution is straightforward, it being only necessary to make sure that the equation to be integrated be correctly chosen at each switching point. An essential consideration is the search for stationary points X_0 which directly define limit cycles, if they (the points) exist. Stability is considered and an equation given for the period. A broad class of piecewise linear systems, including the majority of relay systems permit solution of the equation of periods in the linear approximation. There are 5 figures.

SUBMITTED: July 26, 1961

Card 1/1

16.8000 (1132, 1013, 1121) C.C.

27135
S/102/61/000/004/001/004
D274/D302

AUTHOR: Belea, ~~K.K.~~ (Rumania)

TITLE: Invariance of the controlled variable of an automatic system with respect to variable parameters of the plant

PERIODICAL: Avtomatyka, no. 4, 1961, 3-19

TEXT: The invariance conditions for a self-adjusting system are found. The system is described by the equations

$$Ax = f, \quad (1)$$

where

$$x = \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} \quad A = \begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix} \quad f = \begin{pmatrix} f_1 \\ f_2 \\ 0 \end{pmatrix} \quad (2)$$

x_1 denotes the controlled variable, f_1 - the noise, x_2 and f_2 the
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control variable and reference signal respectively; the third equation describes the dynamic properties of the control unit. The differential operators $a_{ij}(D)$ have variable coefficients. Denoting by Δa_{ij} the deviations from the optimum values a_{ij}^0 one obtains

$$a_{ij} = a_{ij}^0 + \Delta a_{ij} \quad (i, j = 1, 2, 3). \quad (3)$$

The problem consists in finding the relationships between the independent deviations Δa_{1j} , the controlled deviations Δa_{2j} , Δa_{3j} , and the optimum values a_{ij}^0 which follow from the invariance condition of x_1 with respect to Δa_{1j} and f_1 . In fact, the invariance condition with respect to Δa_{1j} already implies the invariance condition with respect to f_1 . A matrix equation is derived which describes the deviation of system (1) from an optimum system. This matrix equation is equivalent to the operator equation

$$F(D)\Delta x_j = \sum_{i=1}^3 X_{ji}(D)x_i^0 + X_{jf}(D)f_1 \quad (j = 1, 2, 3), \quad (10)$$

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where $F(D)$ is the characteristic polynomial of the system, i.e.

$$F(D) = |A(D)| \quad (11)$$

The first of Eq. (10) is especially noteworthy:

$$F(D)\Delta x_1 = X_{11}(D)x_1^0 + X_{12}(D)x_2^0 + X_{13}(D)x_3^0 + X_{1f}(D)f_1, \quad (12)$$

where X are determinants. After elementary transformations, Eq. (11) becomes

$$F(D) = F^0(D) - X_{11}(D) - X_{12}(D) - X_{13}(D) + Y_1(D), \quad (14)$$

where

$$F^0(D) = |A^0(D)| \neq 0, \quad (15)$$

$$Y_1(D) = \begin{vmatrix} a_{11}^0 - a_{12}^0 - a_{13}^0 & \Delta a_{12} & a_{13} \\ a_{21}^0 - a_{22}^0 - a_{23}^0 & \Delta a_{22} & a_{23} \\ a_{31}^0 - a_{32}^0 - a_{33}^0 & \Delta a_{32} & a_{33} \end{vmatrix} + \begin{vmatrix} a_{11}^0 - a_{13}^0 & a_{12}^0 & \Delta a_{13} \\ a_{21}^0 - a_{23}^0 & a_{22}^0 & \Delta a_{23} \\ a_{31}^0 - a_{33}^0 & a_{32}^0 & \Delta a_{33} \end{vmatrix}. \quad (16)$$

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Thereupon the problem reduces to the identical vanishing of the deviations Δx_1 (as given by Eq. (12)). For this it is necessary and sufficient that the following conditions hold: 1)

$$X_{11}(D) = X_{12}(D) = X_{13}(D) = X_{1f}(D) = 0; \quad (17)$$

2) The characteristic polynomial $F^0(D) + Y_1(D)$ should satisfy Hurwitz's stability criterion in the entire domain. Conditions (17) are precisely the relationships with which self-adjusting systems have to comply. In practice, certain difficulties arise in complying with invariance conditions (17). Hence the practical importance attached to systems which follow, even approximately, these conditions without changes in the control parameters while in operation. Such systems are called structural-invariant. The problem consists in finding a system, whose performance measure would remain optimal or nearly-optimal for all values of a_{11} , a_{13} , without changes in the basic control parameters. This problem can be solved by means of the general principles of invariance, and in particular by means of

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control by deviations from the optimum. Denoting by b_2 and b_3 the operators which related Δx_1 to control law, one obtains

$$b_2 = -\frac{a_{11}^0}{a_{13}^0} a_{23}^0, \quad b_3 = -\frac{a_{11}^0}{a_{13}^0} a_{33}^0 \quad (32)$$

for which conditions (17) are satisfied. Further, equation

$$a_{11}^0 [a_{13}^0 (a_{21}^0 a_{32}^0 + a_{31}^0 a_{22}^0) + a_{11}^0 (a_{23}^0 a_{32}^0 + a_{22}^0 a_{33}^0)] x_1 = a_{11}^0 a_{13}^0 a_{32}^0 f_2 \quad (38)$$

is derived which shows that x_1 does not depend (if conditions (32) hold) on a_{11} , a_{13} , and on f_1 , whatever changes these parameters might undergo during the operation of the system. The stability of the system is investigated. It is established that the parallel operation of two internal compensating feedbacks (a positive-critical and a negative) ensures the proper functioning of the system, the absolute invariance of the processes with respect to a_{11} , a_{13} and f_1 , as well as the optimal character of the processes. A system which is more reliable than the just described one, is the

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equivalent system shown in Fig. 6. The advantage of this system consists in the fact that invariance is achieved without a positive feedback and that the invariance conditions hold even for small values of the gain factor K. In linear systems, the condition of absolute invariance can be expressed by

$$z = -y, \quad (51)$$

where z denotes the feedback signal, and y the reference signal. Another way of realizing condition (51) consists in using, in the control unit, a non-linear element with discontinuous characteristic. The author considers systems with relay-elements only. Some results are given obtained from the system of Fig. 6 and from the non-linear system. It is noted that in synthesizing structural-invariant systems, the basic result one arrives at, is a two-loop system; this shows the universal character of such circuits. There are 15 figures and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: J.R. Moore, Combination open-cycle, closed-cycle systems, Proc. IRE, v. 39, n. 11, 1951.

Card 6/7

R/002/62/000/008/002/005
I053/I242

AUTHOR: Belca, Constantin, Doctor of Technical Sciences,
Engineer

TITLE: The automatic apparatus - the nerves of the rockets

PERIODICAL: Știința și tehnica, no.9, 1962, 10-11

TEXT: This is a popular presentation of multi-channel automatic systems for control, guiding, operation, and automatic regulation in cosmic flight. These systems require superior stability and quality of the dynamic processes. The diagram for a multi-dimensional guidance system is given. There is 1 figure. ✓

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ACCESSION NR: AP4015597

R/0011/63/007/006/0249/0255

AUTHOR: Belea, Constantin^{C.} (Doctor of Engineering)

TITLE: Determination of transient and steady-state responses of nonlinear and self-adaptive automatic systems

SOURCE: Automatica si electronica, v. 7, no. 6, 1963, 249-255

TOPIC TAGS: transient response, steady-state response, nonlinear systems, self-adaptive systems, piecewise linear systems, Gauss algorithm

ABSTRACT: The author studies the nonlinear differential equations given in:

$$(1) \quad \dot{x}_k + \sum_{i=1}^m a_{ki} x_i = \sum_{j=1}^n b_{kj} f_j(x_j) + \varphi_k(t), \quad (k=1, 2, \dots, n; m < n),$$

where the nonlinearity is converted in a piecewise linearity given by:

$$(2) \quad f_\beta(x_\beta) = k_{\beta q_\beta} x_\beta + l_{\beta q_\beta}, \quad (\beta=1, 2, \dots, m; q_\beta=1, 2, \dots, N_\beta).$$

He solves these equations step by step by finding the initial conditions in every region of linearization. Later he applies the results obtained to find the limit cycles associated with the process by imposing the condition that the trajectory

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ACCESSION NR: AP4015597

in the phase plane be closed.

Next he applies this method to the study of self-adaptive systems and gives as an example the system in Fig. 1 of the Enclosure whose differential equations are given by:

(6)

$$\dot{x} = k_1 f_1(y);$$

$$\dot{y} + \frac{1}{T_1} y = \frac{k_2}{T_1} f_2(x);$$

$$f_1(x) = \pm x + l;$$

$$f_2(y) = \pm 1.$$

He determines its limit cycle in the y, x space. Next he gives some suggestions on how to approximate the solutions by transforming them into algebraic equations by approximating e^x with a ratio of two polynomials in x . In the Appendix, he shows a method by which one applies Gauss's algorithm to the solution of differential equations. Orig. art. has: 20 equations, 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 14Feb64

ENCL: 01

SUB CODE: CG, MM

NO REF SOV: 008

OTHER: 003

Card 2/3

Belea, Gyongyi

Quick methods for determination of "total" nitrogen, phosphorus, and potassium in manures. János Sarkadi, István Petercz, Gyongyi Belea, Gyula Latorczai, and Béla Légrény (Agrokémiai Kutató Intézet Szervező-nyászati Osztálya, Budapest). *Agrokémia és Talajtan* 4, 71-80 (1955) (German summary).—The samples of manure were broken down chemically, by using the modified Jodlauer method in the 1st batch, and H_2SO_4 and H_2O_2 in the 2nd batch. The N was detd. by the Kjeldahl method. The results obtained by the 2 different methods showed good agreement. The P_2O_5 was detd. colorimetrically; the phosphomolybdate complex was reduced with metal. K_2O was detd. with the use of Schuhknecht-Waibel flame photometer. Nella Hellinger

BELEC, B.

GEOGRAPHY & GEOLOGY

BELEC, B. The anthropogeography of villages in lower Mursko polje. p. 132.
Vol. 27/28, 1955/56 (published 1957).

Monthly List of East European Accessions (EEAI) Vol. 11, No. 2.
April 1959 Unclass.

BELEC, Borut

Geomorphology of Haloze. Geogr zbor SAZU 6:161-190 '61.

BELEC, Borut

Morphology of the Maribor Plain. Geogr obz 8 no. 3/4:78-82. '61.

BELEC, C.; GIEDOSZ, B.

Lymphopenic reaction as tests of adrenal function. Przegl. lek.,
Krakow 8 no. 5:140 1952. (CML 22:5)

1. Of the Institute of General and Experimental Pathology (Head--
Prof. B. Giedosz, M. D.) of Krakow Medical Academy.

BELEC, O.; POLATYNSKA-WECIAWOWICZ, J.

Mechanism of lymphopenia after cortisone treatment. Przegl. lek., Krakow
8 no. 8:245-246 1952. (CLML 23:5)

1. Of the Institute of General and Experimental Pathology (Head--Prof.
Bronislaw Giedoss, M.D.) of Krakow Medical Academy.

POLAND/Human and Animal Physiology (Normal and Pathological).
Body Temperature Regulation. T

Abs Jour: Ref Zhur-Biol., No 17, 1958, 79345.

Author : Delec, Czeslaw; Swolkien, Andrzej.

Inst :

Title : Experimental Study of the Role of the Hypophysis in
Temperature Regulation of Experimental Animals.

Orig Pub: Lekarz wojskowy, 1956, 32, No 11, 1178-1179.

Abstract: No abstract.

Card : 1/1

3
BELEC, Czeslaw
JRNNAME, Given Names

Country: Poland

Academic Degrees: Dr med.

Affiliation: Director of Central Military Sanatorium (Centralny Wojskowy Sanatorium), Krinica

Source: Warsaw, Przegląd Lekarski, No 6, 1961, pp 240-241.

Data: "The Influence of the "Zuber III" and "Jan" Mineral Waters on Blood Pyruvic Acid Level, Alkaline Reserve, and Lipids in Alloxan Diabetes."

Co-author:

LAZOWSKI, Jan, Central Military Sanatorium (Centralny Wojskowy Sanatorium), Krinica; Director: Czeslaw BELEC, dr med.

670 981643

BELEC, Czeslaw; LAZOWSKI, Jan

Effect of mineral waters from the springs "Jan", "Zuber III",
"Tadeusz", "Slotwinka" on carbohydrate metabolism. Polski tygod.
lek. 16 no.38:1446-1450 18 9 '61.

1. Z Centralnego Wojskowego Sanatorium w Krynicy; kierownik: dr
med. Czeslaw Belec.

(BLOOD SUGAR pharmacol) (MINERAL WATERS pharmacol)

BELEC, Czeslaw; SOLECKI, Stanislaw

Estrogenic bodies in the Krynica mud. Pol. tyg. lek. 17 no.15:567-568
9 Ap '62.

1. Z Centralnego Sanatorium Wojskowego w Krynicy; kierownik: dr med.
Czeslaw Belec.

(MUD THERAPY) (ESTROGENS)

BELEC, Czeslaw; LAZOWSKI, Jan

Effect of mineral water electrolytes on the fermentative capacity
and multiplication of fungi. Pol. tyg. lek. 19 no.34:1303-
1305 24 S '64.

1. Z Ośrodka naukowo-leczniczego Centralnego Wojskowego
Sanatorium w Krynicy (kierownik: plk. doc. Czesław Belec).

Belechanu, A.

RUMANIA/General Biology - Individual Development.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 14383

Author : Parkhon, Laurian, Belechanu, Albu

Inst : -

Title : Study of Guided Embryogenesis. Communication 11 (or II?).
Role of Dosages in Development Stage when Forming an
Experimental Insulin Cataract and Achondraplasia.

Orig Pub : Studii si cercetari endocrinol. Acad. RFR, 1955, 6, No 3-4
378-382

Abstract : Experiments were conducted on chicken embryos, chicks and mice. Beginning with the 10-20th day of incubation, 130 chick embryos were given an insulin injection (single dose of 40, total dose of 80-200 γ). The later insulin injections were begun, the rarer were the cases of achondroplasia and cataract. When insulin was injected in doses of 100-180 γ into 1-3 day old chicks, 2-sided massive cataracts were noted, with subsequent death of chicks. When

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USSR / General Biology. Individual Development.

B-4

Abs Jour: Ref Zhur-Biol., No 10, 1958, 42817.

Author : Parkhon, K. I.; Laurian, Lidiya; Belechanu, Marianna;
Albu-Aderka, Nataliya.

Inst : Not given.

Title : Controlled Embryogenesis. Report 5. Effect of Insulin on Hen Embryonic Development (Congenital Cataract and Achondroplasia).

Orig Pub: Zh. med. nauk. Akad. RNR, 1956, 1, No 2, 5-47.

Abstract: Studies were conducted on eggs of White Leghorn and Rhode Island varieties. All told, 1000 eggs were used. Insulin (I) was introduced either by drops on the chorioallantois, or by injection through the shell. The eggs were treated daily or every other day, beginning with the 7th and up to the 14th day of incubation. In each injection

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USSR / General Biology. Individual Development.

B-4

Abs Jour: Ref Zhur-Biol., No 10, 1958, 42817.

Abstract: usually 4-8 γ of I was introduced, dissolved in 0.008-0.05 ml of distilled water, so that the embryo received a total dose of 4-72 γ . The control embryos were given distilled water, solutions of phenol, cresol, and acidified cresol in the same concentrations and at the same pH as the I solutions. Introduction of daily 1 doses up to a total dosage of 20-72 γ , beginning with the 7, 8 and 9th day of incubation, causes the formation of a partial or total bilateral cataract, appearance of achondroplasia, different degrees of delayed total development, and a lengthening of the incubation period by 1-3 days. In order to develop achondro-

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USSR / General Biology. Individual Development.

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Abs Jour: Ref Zhur-Biol., No 10, 1958, 42817.

Abstract: plasias one injection is sufficient, while the formation of a cataract requires at least 5 injections. Introduction of I starting with the 11th day of incubation causes no defects. In the authors' opinion, the mechanism of anomalous generation is related to disruption of carbohydrate metabolism. Bibl. 104 refs.

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B-4

BELECHANU, A.

RUMANIA/General Biology - Individual Development.

Abs Jour : Ref Zhur - Biol., No 8, 1958, 33375

Author : Parkhon, Laurian, Belechanu, Albu

Inst : -

Title : Effect of Cortisone on Development of Chick Embryo.
(Vliyanie kortizona na razvitiie kurinogo zarodysha).

Orig Pub : Studii si cercetari endocrinal. Acad. RPR, 1956, 7,
No 4, 451-457

Abstract : After introducing 0.25-1.4 mg of cortisone into eggs a marked lag in development is noted (delay of embryo growth and feathering development, disruption of epiphysis structure) and ocular anomalies ("bovine eye", enlarged cornea, keratoconus). The authors consider that delay of development is caused as a consequence of disruption of protein metabolism and the anomaly of ocular development is one of the manifestations of development delay caused by conservation of mesenchyme

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B-4

BELECHANU, A.
 RUMANIA / General Biology. Individual Development

Abs Jour: Ref Zhur - Biol., No 6, 1958, 23778

Author : Parkhon, Laurian, Belechanu, Albu

Inst : Not given

Title : Experiment on Control of Embryogenesis.

Orig Pub: Bul. stint. Soc. med., 1956, 8, No 2, 457-498

Abstract: Tests were conducted on the effect of hormones (thyroxin, insulin, desoxycorticosterone, cortisone, parathyroid gland hormone) and extracts (placental protein of bifurcate gland and epiphyseal) on development of chick embryos. Results of effects of these substances: dwarfism; congenital insulin cataract and achondroplasia, as a consequence of carbohydrate metabolism disturbance; growth stimulation as a result of introduction of epiphyseal hormone; retarded development, accompanied by

Card : Card 1/2

JOURNAL/Human and Animal Physiology. Sense Organs. Interoception.

T

Abs Jour: Ref Zhur-Biol., No 20, 1958, 93732.

Author : Druker, I., Delechanu-Stolnich, K.

Inst : Communist Academy R.P.R.

Title : Investigation of Visual Chemoreceptors (Review)

Orig pub: Ruzgansk. med. obozreniye, 1957, 1, No 2, 101-102.

Abstract: For shutdown of the different venous pathways of the eye part of the anastomosis of the draining vessels was destroyed by means of separating the conjunctiva of the eyeball, and the anterior ciliary veins were detached by cutting the rectus muscles; circulation was stopped in the veins of the choroid membranes by exposing the sclera from its ciliary nerves, and a diathermic coagulation was achieved of all the vascular trunks near to the optic nerve. A study was

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NEURON/Man and Animal Physiology. Sense Organs. Interception.
Abs Jour: Ref Zhur-Miol., No 20, 1956, 93732.

the reaction in the indicated substance) confirmed the
existence of chemoreceptors in the eye. -- M.G. Rabino-
vich.

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EXCERPTA MEDICA Sec 2 Vol 12/1 Physiology Jan 59

306. THE PHYSIOLOGICAL CONTRACTURE OF ISOLATED FROG MUSCLE -
Untersuchung der physiologischen Kontraktur am isolierten Froschmuskel -
Baleczki E. Biophys. Inst., Med. Univ., Pécs - ACTA PHYSIOL. ACAD.
SCI. HUNG. 1958, 12/suppl. (78)

Abolition of the resistance in the abducted stretched arm results in raising of the arm. The gastrocnemius muscle of the frog was electrically stimulated for 4-5 sec. and the stimulating current was interrupted 2 sec. before removal of the spring. Contraction followed. This is also not a neural phenomenon. It may be that crystallization of myosin plays a part here.

Heydemann - Amsterdam

BELECZKI L.

Biophys. Inst., Med. Univ., Pecs. *Negative Doppelbrechung im quergestreiften Muskel.
Negative birefringence in striated muscle ACTA PHYSIOL. ACAD. SCIENT. HUNG. (Budapest).
1954, 5/suppl. (20)

SO: ^CEXERPTA MEDICA, Section II Vol. 7 No. 11
/1

BELECZKI, L.

5068. Negative birefringency of muscles after formal treatment.
 E. Ernst and L. Beleczi. *Acta physiol. Acad. Sci. Hung.*, 1956, 9,
 1-6 (Biophysic. Inst., Med. Univ., Pécs, Hungary).—Frog muscles
 and fibrils of wing muscles of insects were treated with 20% urea
 solutions and 12% formal solutions and their optical properties
 were examined with a polarizing microscope. A negative birefringency
 develops as the formalin dries in on the surface, first in the isotropic
 parts then in the entire fiber. A somewhat similar picture is seen
 when a small amount of formal solution is allowed to dry (and
 crystallize) on a thin platinum wire. It is suggested that in the case
 of the muscle fibers the formal also forms crystals which are oriented
 by the micro-structure of the fibers or fibrils, thereby developing
 negative birefringency. It is suggested that this technique may be
 used as a method by which cell structures may be studied in a native
 state. (German)
 A. B. L. BZNAK.

Beleczky, L.

Med

1956. Electrodynamics of striated muscle. I. "Extraction methods". II. The long structure. III. The cross-striation. IV. Contracted form. E. Ernst, L. Beleczky and J. Nagy *Acta physiol. Acad. Sci. Hung.* 1956, 8, 7-39 (Physiol. Inst., Med. Univ., Pécs, Hungary).

—1. The optical behaviour of frog muscle fibres and single fibrils of these muscle was photographically recorded under a polarising microscope in different solutions (Edsall-Weber, distilled water, 1% lactic acid, Ringer, etc.) during different stretches and relaxations. It was shown that identical changes in the optical behaviour are brought about by a variety of manipulations, therefore, the disappearance of an optical property (e.g. birefringency) does not prove that it was caused by the extraction of a birefringent substance.

II. Photographic records of native insect muscle fibrillae show the presence of long structures (filaments, protofibrillae) passing uninterrupted through several anisotropic and isotropic discs; they are much thinner and more delicate in the I disc. The spiral structure could also be photographed. A very great variability of all these optical properties, thickness of the different discs, direction of the windings of the spiral (in the same fibril), thickness of the 2 discs in the relaxed and contracted state, was found already in the native fibrils.

III. Hürthle's conclusion that the cross-striation is not a static structural part of the fibril but varies with the waves of contractions and relaxations was confirmed. Not all the longitudinal fibrillae of a fibre are simultaneously contracted but often bundles of fibrillae only. From the optical behaviour of *Hydrophilus* fibrils under different experimental conditions (application of different solvents, stretch, relaxation etc.) it is concluded that the anisotropic disc in the fibril is caused by an enrichment of myosin, the isotropic disc by less thickly packed actin filaments, the Z line is due to an intrafibrillary stratified organisation, the M disc can only be a thickening of the substance in the anisotropic disc. The changes in

1/2

Deleczky, E. Ernest, and Nagy, J.

optical behaviour of the fibril caused by stretch are attributed to physical and chemical changes in the materials making up the fibril elicited by the stretch.

IV. The tighter packing of the cross striation during contraction is attributed to diminution in height and increase in width of the material between 2 Z bands. It is suggested that during contraction only certain parts of the fibrils contract, others in between are stretched. This stretch elicits a stiffening and a further tension increase caused by crystn. (German)

A. B. L. BERNAL

2/2

BELECSEKI, Lajos, dr., orvos.

Noise harm in foundries. Koh lap 97 no.3: Suppl. Ontode 15 no.3:

53-57 Mr.64.

1. Ganz-Mavag.

BELECZKI, Lajos, dr.; RIBARI, Otto, dr.

Investigation of hearing reduction in noisy iron industry shops.
Munkavedelem 9 no. 10/12:40-43 '63.

1. Ganz-Mavag Polyclinic and the Ear, Nose and Throat Clinic
of the Budapest Medical University, Budapest.

BELEDA, R.V.

Two cases of herpes zoster simulating acute appendicitis, Sov. med.
21 no.7:133-134 J1 '57. (MIRA 12:3)

(APPENDICITIS, differ. diag.

herpes zoster (Rus))

(HERPES ZOSTER, case reports

simulating acute appendicitis (Rus))

BELEDA, R.V.

Treatment of snake bite with Novocaine blockade. Sov.med.22 no.5:
117-118 My '58 (MIRA 11:7)

(SNAKE BITES, ther.

procaine block (Rus))

(ANESTHESIA, REGIONAL, in various dis.

procaine block in snake bites (Rus))

GAPOCHKO, K.G.; ALIYEV, A.M.; ZELKIND, D.B., kand.med.nauk; STATSENKO, A.A.; ESTER, E.; BELEDA, R.V.; AZNAUR'YAN, M.S.

Abstracts. Sov.med. 26 no.7:141-144 J1 '62. (MIRA 15:11)

1. Iz kafedry infektsionnykh bolezney Voenno-meditsinskoy ordena Lenina akademii imeni S.M.Korova (dor Gapochko). 2. Iz fakul'tetskogo terapevticheskogo otdeleniya Dagestanskoy respublikanskoy klinicheskoy bol'nitsy (for Aliyev). 3. Iz kozhnogo otdeleniya poliklinikNo. 68, Moskv (for Zelkind). 4. Iz Dokshukinskoy rayonnoy bol'nitsy Kabardino-Balkarskoy ASSR (for Statsenko). 5. Iz Myssakyul'skoy gorodskoy bol'nitsy Estonskoy SSR (for Ester).

(MEDICINE—ABSTRACTS)

BELEDI, Dezső, okleveles gépészmérnök; KESZTHELYI, Tibor, okleveles
gépészmérnök

Development of winged boats in Hungary. Jarmu mezo gep 11 no.9:
346-351 S '64.

1. Designing Division, Vac Factory Unit, Hungarian Shipyard and
Crane Factory, Vac.

BELEDI, Dezsó

Water-jet driven. Musz elet 19 no.18:1,13 27 Ag '64

BELEDI, Dezsó

Ships with supporting wings. Jarmu mezo gep 7 no.11:
422-426 '60.

BELEDIN, Yu. (Volgograd)

Low-speed airplanes give way. Grazhd. av. 21 no.8:20 Ag '64.
(MIRA 18:4)

BELEEVA-STAIKOVA, R., st. asistent

Intestinal flora, source of vitamins. Biol i khim 4 no.2:6-7
'62.

1. St. asistent po biokhimiia vuv VMI, Plovdiv

*

POPOVIC,M.; KOSTIC,S.; ACKETA,M.; KOTUR,B.; IATINCIC,D.; KOLAROVIC,L.;
BELEGISANIN,D.

Remote results of therapeutic use of artificial pneumothorax
following thoracoplasty at a regional hospital during 1951-
1956. Tuberkulosa, Beogr. 11 no.3:363-367 '59.

1. Pokrajinska bolnica sa tuberkulozu, Novi Sad, upravnik: dr
S. Kostic.

(PNEUMOTHORAX ARTIFICIAL statist.)

CELL 7154111, 11.

3

YUGO.

345.822

2843. The use of sodium fluoride as carrier in the spectrographic determination of cadmium and barium in uranium. N. B. B. and V. M. Russell *Ther. Inst. Res. Struct. Metals (Soviet)* 2, 27-30 (Jan., 1953).

Method of Scribner and Mullin [*J. Res. Nat. Bur. Stand.*, 37, 579 (1946)] is modified. About 100 mg of sample is converted to U_3O_8 by heating nitrate and 10-15 mg NaF is added. This suppresses spectrum of U and assists distillation of trace elements. A carbon arc (70 V, 6 A) with Foster electrodes is used. Be is used as internal standard for Cd. For B either In or Ba may be used. Sensitivity is 1×10^{-8} g B and 3×10^{-8} g Cd in 100 mg U_3O_8 . Accuracy about 1%.

A. D. DAYDON

AmL JSH

BELEGISANIN, Natalija

Quenching of uranium fluorescence in the solution U-NaF. Glas Hem dr
20 no.1:23-28 '55.

1. Institut za nuklearne nauke "Boris Kidric," Fizicko-hemijska
laboratorija, Beograd-Vinca.

BELEGISANIN, IV

2 pages
0-ent

7478* Opređenje Akcije od Srebrnih Metala na Fluoridima
od Litijuma u Natrijum Fluorid Metla. Proučavanje gashen's
fluoridiziranih uređaja u rasponu 1-200 (Serbian) Mladina
Belyadina, Glavni Kemijski Posrednik Beograd, v. 21, no. 1,
p. 105, n. 23, 24

Effects of the typical quenching elements Cr, Mn, P, Cu, Ni, and Bi are studied. Tables, graphs, spectrogram. 5 ref.

PM 428 LFH

21 4 27
Fluorescence of cerium in sodium fluoride melts. Nat.
in Belgrade (Inst. Fizika, Beograd, Yugoslavia). Gradski Kem. Drustvo,
Beograd 21 271-4/1956. —Ce compds. in NaF melts ex-
hibit fluorescence in the range of 4400-8000 Å, with max-
ima at 470 and 517 mμ. The fluorescence of Ce was applied to
detn. of Ce occurring with other rare earths, Y, and Tb.
which, when present in suitable amts, do not quench the
fluorescence. In the presence of U, a preliminary sepa-
ration must be carried out to facilitate the fluorimetric detn. of
both elements. 2 NIKK

Distr: 4E4j/4E3d

Belegishanina

YUGOSLAVIA/Analytical Chemistry - Analysis of Inorganic Substances E-2

Abs Jour : Ref Zhur - Khimiya, No 3, 1958, No 7590

Author : Belegishanina

Inst : Not Given

Title : The Fluorescence of Cerium in Sodium Fluoride Beads

Orig Pub : Glasnik Khim drusht., 1956, 21, No 5, 271-276

Abstract : Compounds of cerium produce fluorescence in the region 430-600 mμ with an intensity maximum at 470 and 517 mμ. Since cerium is fluorescent it permits one to determine it quantitatively in the presence of rare-earth elements Y and Th, which at a suitable dilution do not effect the fluorescence of Ce. If uranium is present its preliminary separation is compulsory.

Card : 1/1

BELEK, Jan, mgr inz.; DOMOSLAWSKI, Stanislaw, mgr inz.; WRTOSEK, Mateusz,
mgr inz.; De MEZER, Jerzy, mgr inz.; TURKIEWICZ, mgr inz.
BOROWICZ, Lech, mgr inz.

Survey of foreign measuring and controlling instruments
at the 32nd International Poznan Fair. Pomiary 9 no.12:
607-611 D '63.

~~BELEKHOV~~, Gennadiy Petrovich, Kandidat sel'skokhozyaystvennykh nauk,
~~YEGOROV~~, Yevgeniy Vladimirovich, zasluzhennyy zootekhnik BSPSR;
VOROB'YEV, F.I., redaktor; VODOLAGINA, S.D., tekhnicheskyy redaktor

[Dairying in Volosovo District] Molochnoe zhiivotnovodstvo Volosov-
skogo raiona. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 125 p.
(MLRA 9:8)

1. Glavnyy zootekhnik Volosovskoy mashinno-trakternoy stantsii.
(for Yegorov)
(Volosovo District--Dairying)

Belokhov, Gennadiy Petrovich

BELEKHOV, Gennadiy Petrovich; BOLOGOV, G.N., red.; CHUMAYEVA, Z.V., tekhn.
red.

[Masters of high milk yields; the "Iskra" Collective Farm of
Vsevolozhskiy District, Leningrad Province] Mastera vysokikh nadoev
moloka; kolkhos "Iskra" Vsevolozhskogo raiona Leningradskoi oblasti.
Moskva, Gos.izd-vo sel'khoz. lit-ry, 1957. 38 p. (MIRA 11:3)
(Dairying)

BELEKHOV, Gennadiy Petrovich; CHUBINSKAYA, Alla Aleksandrovna;
MAGON, E.E., red.

[Mineral and vitamin nutrition of farm animals] Mineral'-
noe i vitaminnoe pitanie sel'skokhoziaistvennykh zhivot-
nykh. Izd.2., perer. i dop. Leningrad, Kolos, 1965. 297 p.
(MIRA 19:1)

BELEKHOVA, M.G.

Effect of the cervical sympathetic nerve and adrenaline on the functioning of the nonspecific thalamocortical structures. Fiziol. zhur. 48 no.2:134-144 F '62. (MIRA 15:2)

1. From the Laboratory of Comparative Physiology of the Central Nervous system, I.M.Setchenov Institute of Evolutionary Physiology, Leningrad.
(ADRENALINE) (NERVOUS SYSTEM, SYMPATHETIC)
(CEREBRAL CORTEX) (OPTIC THALAMUS)

BELEKHOVA, M.G.

BELEKHOVA, M.G.

Effect of caffeine on the summative ability of the submaxillary gland. Biul.eksp.biol. i med. 43 no.5:36-38 My '57. (MIRA 10:10)

1. Iz kafedry normal'noy fiziologii (zav. - deystvitel'nyy chlen AMN SSSR P.S.Kupalov) 1-go Leningradskogo meditsinskogo instituta. Predstavlena deystvitel'nyy chlenom AMN SSSR prof. Ye.S.Kupalovym.

(CAFFEINE, eff.

on submaxillary gland summation ability in cats (Rus))

(SUBMAXILLARY GLAND, physiol.

eff. of caffeine on summation ability in cats (Rus))

BYLEKHOVA, M.G.

Circulation in the cranial venous sinuses [with summary in English]
Fiziol.shur. 44 no.12:1111-1118 D '58 (MIRA 12:1)

1. Kafedra normal'noy fiziologii 1-go Meditsinskogo instituta
Leningrad.

(VEINS, CRANIAL SINUSES, physiol.
circ. (Rus))

BELEKHOVA, M. G.: Master Med Sci (diss) -- "The problem of blood circulation in the venous sinuses of the brain". Leningrad, 1959. 24 pp (First Leningrad Med Inst im Acad I. P. Pavlov), 200 copies (KL, No 17, 1959, 110)

BELEKHOVA, M.G.

Nature of blood flow in venous sinuses of the brain. *Fiziol.zhur.*
45 no.3:295-303 '59. (MIRA 12:11)

1. From the department of physiology, First Medical Institute, Lenin-
grad.

(VEINS, CRANIAL SINUSES physiol.
circ. (Rus))

BELEKHOVA, M.G.; NAUMENKO, A.I.

Characteristics of the appearance and spreading of pulse-waves in
the cranial cavity. Biul.eksp.biol.i med. 48 no.12:17-20 D '59.
(MIRA 13:5)

1. Iz kafedry normal'noy fiziologii (zav. - chlen-korrespondent
AMN SSSR A.V. Kibyakov) i Leningradskogo meditsinskogo instituta
imeni akademika I.P. Pavlova. Predstavlena deystvitel'nyy chlenom
AMN SSSR P.S. Kupalovym.

(BRAIN blood supply)
(PULSE)

VAN TAY-AN' [Wang Tai-an]; BELEKHOVA, M.G.

Effect of the cervical sympathetic nerve and certain pharmacological substances on the "recruitment reaction." Fiziol. zhur. 47 no.1: 19-29 Ja '61. (MIRA 14:3)

1. From the Laboratory of Comparative Physiology of the Central Nervous System, Sechenov Institute of Evolutional Physiology, Academy of Sciences of the U.S.S.R., Leningrad.
(BRAIN) (NERVOUS SYSTEM, SYMPATHETIC)
(PHARMACOLOGY)

BELEKHOVA, M.G.

Effect of injury to the diencephalon and mesencephalon on the electrical activity of the cerebrum in pigeons. Biul. eksp. biol. i med. 53 no.2:31-35 F '62. (MIRA 15:3)

1. Iz laboratorii sravnitel'noy fiziologii tsentral'noy nervnoy sistemy (zav. - prof. A.I. Karamyayn) Instituta evolyutsionnoy fiziologii imeni I.M. Sechenova, Leningrad. Predstavlena deystvitel'nyy chlenom AMN SSSR P.S. Kupalovym.

(ELECTROENCEPHALOGRAPHY)

(BRAIN--WOUNDS AND INJURIES)

(DIENTEPHALON--WOUNDS AND INJURIES)

BLAGOVIDOVA, L.A.; BELEKHOVA, M.G.; ZAGORUL'KO, T.M.

Electrical activity changes in the diencephalic region and in the cerebral cortex of the rabbit under the influence of bitemporal diathermy. Biul. eksp. biol. i med. 53 no.5:8-13 My '62. (MIRA 15:7)

1. Iz bol'nitsy imeni V.V. Kuybysheva i laboratorii 'brav-nitel'noy fiziologii tsentral'noy nervnoy sistemy (zav. - prof. A.I. Karavayev) Instituta evolyutsionnoy fiziologii imeni I.M. Sechenova AN SSSR, Leningrad. Predstavlena deystvitel'nym chlenom AMN SSSR P.S. Kupalovym.
(DIATHERMY) (CEREBRAL CORTEX) (DIENCEPHALON)
(ELECTROENCEPHALOGRAPHY)

KARAMYAN, A.I.; BELEKHOVA, M.G.

Functional evolution of the nonspecific thalamo-cortical system. Zhur. vys. nerv. deiat. 13 no.5:904-916 3-0'63

(MIRA 16:11)

1. Sechenov Institute of Evolutionary Physiology, U.S.S.R. Academy of Sciences, Leningrad.

BELEKHOVA, M.G.

Electric activity of the cerebral hemispheres of *Varmus*
griseus induced by excitation of structures of the diencephalon.
Fiziol. zhur. 49 no.11:1318-1329 N '63. (MIRA 17:8)

1. Laboratoriya sravnitel'noy fiziologii tsentral'noy nervnoy
sistemy Instituta evolyutsionnoy fiziologii imeni Sechenova
AN SSSR, Leningrad.

BELEKHOVA, M.G.; ZAGORUI'KO, T.M.

Correlation between the background electric activity of the brain, discharge of the aftereffect and intensification of the electrogram reaction to light stimulation in turtles *Emys orbicularis*. Zhur.vys. nerv.deiat. 14 no.9:1079-1089 N-D '64.

(MIRA 18'6)

1. Laboratory of Comparative Physiology of the Central Nervous System, Sechenov Institute of Evolutionary Physiology, U.S.S.R. Academy of Sciences, Leningrad.

BELEKHOVA, M.G.

Effect of the cervical sympathetic nerve on the convulsive activity of the cerebral cortex in cats. Fiziol. zhur. 49 no.2: 164-172 P'64 (MIRA 17:3)

1. Laboratoriya sravnitel'noy fiziologii tsentral'noy nervnoy sistemy Instituta evolyutsionnoy fiziologii imeni Sechenova AN SSSR, Leningrad.

MENITSKIY, D.N.; BELEKHOVA, M.G.; ZAGORUL'KO, T.M.

Separation of physiological factors from physical factors in the leading off of evoked potentials in the central nervous system of lower vertebrates. Fiziol. zhur. 50 no.5:637-640 My '64.

(MIRA 18:2)

1. Otdel sravnitel'noy fiziologii Instituta eksperimental'noy meditsiny AMN SSSR i Laboratoriya sravnitel'noy fiziologii imeni Sechenova AN SSSR, Leningrad. .

AUTHOR: BELENKOVA, N.G.

43-1-7/10

TITLE: The Consideration of the Spatial Flow Around a Turbine Runner (Uchet prostranstvennosti potoka, obtekanushchego rabocheye koleso turbomashiny)

PERIODICAL: Vestnik Leningradskogo Universiteta, Seriya Matematiki, Mekhaniki i Astronomii, 1958, Nr 1(1), pp.88-107 (USSR)

ABSTRACT: The turbine runner is assumed to move with constant angular velocity in a space formed by two surfaces of revolution. The liquid is assumed to be ideal and incompressible, the consumption of liquid to be constant, the flow nonsteady and irrotational. The flow around the turbine runner which takes place under these suppositions is three-dimensional and was considered some years ago by Vallander [Ref. 4] who established a system of differential equations which did not only take into account the curvature of the flow planes, but also the variable thickness of the liquid layer between the adjoining flow planes. The author applies the method of [Ref. 4] and carries out her investigation in the orthogonal system which is formed by surfaces of revolution, flow planes and planes through the axis of rotation. For the determination of the "stream function" ψ of the two-dimensional flow on the flow plane F she obtains the equation

Card 1/2

The Consideration of the Spacial Flow Around a Turbine Runner

43-1-7/10

$$(1) \quad \frac{\partial^2 \psi}{\partial \xi^2} + \frac{\partial^2 \psi}{\partial \eta^2} - \frac{\delta'(\xi)}{\delta(\xi)} \psi = 0,$$

where δ is the distance between two adjacent flow planes,

$$\psi = \int \frac{H_2}{H_3} dq_2, \quad q_1, q_2, \xi \text{ are the curvilinear coordinates}$$

and H_i the Lamé coordinates in the system (q_1, q_2, ξ) . For the solution of (1) she proposes an approximation method whereby instead of (1) an Euler-Darboux equation is integrated. A generalization of the method is proposed. 5 figures, 10 Soviet and 1 foreign references are quoted.

SUBMITTED: 16 March 1957

AVAILABLE: Library of Congress

1. Turbine runners-Spacial flow
2. Mathematical analysis
3. Differential equations

Card 2/2

66579

3.2100

SOV/49-59-9-19/25

AUTHOR: Belekhova, N. G

TITLE: On the Effect of the Parameters of Free Molecular Flow of a Rarefied Gas on the Indications of Instruments in Rocket Measurements of the Density of High Altitude Layers of the Atmosphere

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 9, pp 1423-1429 (USSR)

ABSTRACT: In the study of high altitude layers of the atmosphere with the aid of rockets it is necessary to establish the relation between the indications of the instruments and the parameters of the undisturbed medium. In the present work the relative motion of the instrument container in a free molecular stream of rarefied gas is considered. The free molecular flow region is defined as that in which the mean free path of the molecules of the medium is much greater than the linear dimensions of the container. The container normally includes magnetic and ionization manometers and is in the form of a hollow cylinder with vertical slits, as shown in Fig 1. Expressions are

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On the Effect of the Parameters of Free Molecular Flow of a Rarefied Gas on the Indications of Instruments in Rocket Measurements of the Density of High Altitude Layers of the Atmosphere

derived for the concentration of molecules inside the container and it is shown that the equilibrium between the number of molecules leaving and entering the container is established in less than 0.05 sec. The concentration of "internal" molecules in the container can be calculated from Eq (17) with the aid of the barometric formula given by Eq (15), where S is the total area of all the windows, N_g is the number of molecules leaving the container through the windows per second, c_1 is the most probable thermal velocity of the molecules of the surrounding medium and m is a constant. The number of molecules which enter the aperture of the manometer placed inside the container, of the type shown in Fig 1, is practically determined by the concentration of "internal" molecules inside the container and can be calculated from Eq (27) in which S_M is the area of the input aperture of the manometer. There are 1 figure and 2 Soviet references.

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SOV/49-59-9-19/25

On the Effect of the Parameters of Free Molecular Flow of a
Rarefied Gas on the Indications of Instruments in Rocket Measure-
ments of the Density of High Altitude Layers of the Atmosphere

ASSOCIATION: Akademiya nauk SSSR. Institut prikladnoy geofiziki
(AS USSR, Institute of Applied Geophysics)

SUBMITTED: December 19, 1958

Card 3/3

S/049/60/000/004/018/018
E032/E314

AUTHOR: Belekhova, N.G.

TITLE: Letter to the Editors

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya
geofizicheskaya, 1960, No. 4, p.632.

TEXT: It is pointed out that Eq. (16) in Ref. 1, which gives the number of molecules passing through the instrument, cannot be correct since in the comparison of the number of molecules entering and leaving the instrument, its apertures cannot be looked upon as point apertures. Thus, in the case of a container with two apertures, such that the velocity vector of the stream lies along the line connecting the centres of the apertures, the ratio of the number of molecules leaving the instrument to those entering it is equal to $0.006 + 0.0024u/c_1$ provided u/c_1 is much less than unity. For the limiting case where the u/c_1 tends to infinity, the number of molecules which enter or leave the container tends to the same limit, and it cannot be assumed that N_{out} is always much less than N_{in} . However, for the range of velocities considered in the above

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Letter to the Editors

S/049/60/000/004/018/018
E032/E314

paper, N_{out} is in fact less than N_{in} so that the results of the numerical calculations are correct. A.I. Ivanovskiy is thanked for valuable advice. ✓B
Reference 1: N.G. Belekhova. On the Effect of the Parameters of Free Molecular Flow of a Rarefied Gas on the Indications of Instruments in Rocket Measurements of the Density of High-altitude Layers of the Atmosphere. Izv. AS SSSR, ser. geofiz., 1959, No.9.

Card 2/2

SOKOLOV, I.Yu.; AYDIN'YAN, N.Kh.; BELEKHOVA, V.N.; BRODSKIY, A.A., starshiy nauchnyy sotrudnik; GLEBOVICH, T.A.; DAIMATOVA, T.V.; KOMAROVA, A.I.; KOMAROVA, Z.V.; KOPYLOVA, M.M.; KUDRYAVTSEVA, M.M.; LIBINA, R.I.; LOGINOVA, L.G.; MARGOLIN, L.S.; MARKOVA, A.I.; MEDVEDEV, Yu.L.; MILLER, A.D.; MULIKOVSKAYA, Ye.P.; NECHAYEVA, A.A.; OZEROVA, N.V.; PALKINA, I.M.; PETROPVLOVSKAYA, L.A.; POPOVA, T.P.; REZNIKOV, A.A.; SERGEYEV, Ye.A.; SETKINA, O.N.; STEPANOV, P.A.; SUVOROVA, Ye.G. [deceased]; SHERGINA, Yu.P.; PANOVA, A.I., red.izd-va; IVANOVA, A.G., tekhn.red.

[Methodological handbook on the determination of microcomponents in natural waters during prospecting for ore deposits] Metodicheskoe rukovodstvo po opredeleniiu mikrokomponentov v prirodnykh vodakh pri poiskakh rudnykh mestorozhdenii. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po geol. i okhrane neдр, 1961. 287 p. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii (for Sokolov, Brodskiy, Glebovich, Ozerova, Kudryavtseva, Loginova, Markova, Medvedev, Belekhoval, Palkina, (Continued on next card)

SOKOLOV, I.Yu.---(continued) Card 2.

Popova, Petropavlovskaya). 2. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR (for Aydin'yan). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut metodiki i tekhniki razvedki (for Miller, Sergeyev, Margolin). 4. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut (for Mulikovskaya, Reznikov). 5. Vsesoyuznyy nauchno-issledovatel'skiy institut mineral'nogo syr'ya (for Komarova, A.).

(Prospecting---Geophysical methods)

(Water, Underground---Analysis)

PETRIK, G.K.; VOYTIK, Z.S.; BELEKOV, O.

Organic and mineral changes of coal in the oxidation process during storage. Report No. 1: Weight changes of fuel mass and ashes of brown, gas, and poor coals in the process of oxidation by air at 80°C. Izv. AN Kir. SSR. Ser. est. i tekhn. nauk 3 (MIRA 16:7) no.2:105-113 '61.

(Coal--Analysis)

PETRIK, G.K., kand.tekhn.nauk; SARYMSAKOV, Sh.; BELEKOV, O.

Improving the methodology of laboratory determining of the
coking properties of coal and charge. Koks i khim. no.12:13-16
'62. (MIRA 16:1)

1. Institut nefte- i uglekhimicheskogo sinteza Sibirskogo
otdeleniya AN SSSR (for Petrik). 2. Institut organicheskoy
khimii AN Kirgizskoy SSR (for Sarymsakov, Belevov).
(Coke—Testing)

BELELOVSKIY, M.L.; ZIL'BERSHTEYN, M.B.

Using correlated dependencies to interpret vertical electric
prospecting curves. Razved.i prom.geofiz. no.45:74-78 '62.
(MIRA 15:11)
(Surkhandarya Valley—Electric prospecting)

BELELOVSKIY, M.L.; ZIL'BERSHTEYN, M.B.

Using correlation functions for multilayer vertical electric prospecting curves in solving an inverse problem in electric prospecting.
Razved. i prom. geofiz. no.46:53-58 '62. (MIRA 16:3)
(Electric prospecting)

L 15558-63

ACCESSION NR: AR3002963

EWI(1)/BDS/ES(v)

AFETC

Pg-4/Po-4/Pe-4/Pq-4

TF

S/0169/63/000/005/DOI8/DOI8

SOURCE: RZh. Geofizika, Abs. 5099

AUTHOR: Orlovskiy, A. S.; Mal'kanovitskiy, I. M.; Belezovskiy, M. L.

TITLE: Simplified procedures for calculating the gravitational effect of local relief (in the instance of Eastern Central Asia)

CITED SOURCE: Uch. zap. Sredneaz. n.-i. in-t geol. i mineral'n. syr'ya, vyp. 7, 1962, 183-191

TOPIC TAGS: gravitational correction, relief, two-dimensional transparent grid, Young, Barton, Gamburtsev type, parallel profile, Lukavchenko method, quadratic system

ABSTRACT: Ways are examined of simplifying the methods of determining gravitational corrections for this relief of a region, which are reduced to the following: 1) cutting the network of calculation points in sections during the increasing of the radius for calculating the effect of the relief; 2) simplification of the technique of instrumental determination of corrections in a radius up to 100 - 200 m; 3) use of two-dimensional transparent grids (Young, Barton, Gamburtsev type) for

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calculating the effect of relief possessing elongated forms; 4) application of the method of parallel profiles in order to calculate the effect of relief having arbitrary form; 5) simplification of the Lukavchenko method by analytic determination of the correction for relief in a radius up to 500 m using 1:100,000 scale topographic maps and by enlarging zones and sectors removed from the center of the grid. It is pointed out that the choice of one method or the other is determined by the required accuracy of the evaluation of the corrections, by the forms of relief, and by the presence of topographic maps of various scales. Considerable progress in streamlining the determination of corrections for relief of a region will, in the authors' opinion, be made by switching to a quadratic- or hexagonal nodal system for the composition of altitudes on topographic maps using electronic computers.

DATE ACQ: 12Jun63

SUB CODE: PH

ENCL: 00

Card 2/2

AUTHORS:

Vishnevskiy, S.A., and Belchitsina, V.I.

S/514/61/000/005/006/014
100./1207

TITLE:

Surface hardening of machine components by chemical nickel-plating

SOURCE:

Akademiya Nauk SSSR. Komissiya po tekhnologii mashinostroyeniya. Seminar po kachestvu poverkhnosti. Trudy. no.5, 1961. Kachstvo poverkhnosti detalей машин; metody i pribory, uprochneniye metallov, tekhnologiya mashinostroyeniya, 146-155

TEXT:

A brief description is given of methods for chemical nickel-plating. Investigations and tests were carried out to study both the properties of components subjected to chemical nickel-plating, and the mechanism of this process. Diffusion processes improved the adhesion of coatings to components by affecting their internal structure. Heat treatment considerably influenced the durability and adhesion of surface coatings. The wear resistance and anti-seizing properties of nickel-phosphate coatings were markedly improved by heat treatment. Maximum specific load on nickel-phosphate coated components prior to heat treatment was 45 kg/cm², it increased after

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VARLAMOV, M.L.; BELENAVICHYUS, K.K.; MANAKIN, G.A.; *Prinimali uchastiye:*
POLUKHINA, T.I.; KHODAKOVSKIY, V.V.; GORENKOVA, L.V.;
TUL'CHINSKAYA, K.V.; TSITKO, A.S.; SHELAMOV, V.A.

Removal of phthalic anhydride from the waste gases in the production
of glyptal and pentaphthalic varnishes. Nauch. zap. Od. politekh.
Inst. 42:10-21 '62. (MIRA 17:4)

VARLAMOV, M.D.; BELENAVICHYUS, K.K. [Belanavicius, K.]

Study of the acoustical coagulation of a hydrochloric acid aerosol.
Zhur. prikl. khim. 36 no.4:697-703 Ap '63. (MIRA 16:7)

(Aerosols--Acoustic properties)
(Hydrochloric acid)

BELENCAN, J.

The 9th annual convention of the Smelters' Association of Serbia.
Livarstvo 9 no.47:109-111 My '62.

KOLOKOLOV, N.M., doktor tekhn. nauk; KEDROV, A.I., kand. tekhn. nauk;
PROKOPOVICH, A.G., kand. tekhn. nauk; BALYUCHIK, E.A., inzh.;
BELENCHENKO, V.A., inzh.; SUSLOV, F.I., inzh.

Tensioning of rod reinforcement of piling by the electrothermal
method. Transp. stroi. 15 no.4:22-25 Ap '65.

(MIRA 18:6)

KHARADZE, G.V., inzh.; BELENCHENKO, V.A., inzh.

Seven-wire steel cables for reinforcing concrete piles. Transp.
stroi. 13 no.9:63-64 3 '63.

(MIRA 16:12)

BELENCHUK, I., mladshiy nauchnyy sotrudnik

Nationalization in the countries of national democracy.
Nauka i zhyttia 11 no.12:55 D :61. (MIRA 15:2)

1. Sektor derzhavi i prava AN URSR.
(Underdeveloped areas--Politics and government)

МОСКОВ, Н.С.; ИЗДАТЕЛЬСТВО, 1966, 128 с., 10 коп.
ред.

(Safety manual for the foreman of tractor teams) Пособие
по технике безопасности для бригаиров тракторных бри-
гад. Москва, Россел'кhozizdat, 1966. 128 с.

BELENEV, P., mladshiy serzhant, mekhanik-voditel'

There is a snowplow on a cross-country route. Starsh.-serezh.
no.12:19 D '61. (MIRA 15:3)
(Snow plows) (Tanks (Military science)—Cold weather operation)

BELENEV, Yu.N.; KABAK, Ya.M.

Simple model of a stereotaxic instrument for producing small brain lesions in rats. Nauch.dokl.vys.shkoly; biol.nauki no.2:77-82 '59. (MIRA 12:6)

1. Rekomendovana laboratoriyey endokrinologii Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
(PHYSIOLOGICAL APPARATUS) (BRAIN)